

## CHAPTER 1

# MAINTENANCE ADMINISTRATION

As a nonrated person striking for an aviation rating or a new PO3, you will probably be assigned to the aircraft maintenance department of a squadron, ship, or shore station. Most of your duties will be productive maintenance, such as working on aircraft, engines, components, and support equipment. At times, you may be assigned to a support function, such as maintenance, production control, or supply. Regardless of the assignment, you should have a working knowledge of the *Naval Aviation Maintenance Program* (NAMP), OPNAVINST 4790.2, and the organizational structure of aircraft maintenance departments.

### NAVAL AVIATION MAINTENANCE PROGRAM

**LEARNING OBJECTIVE:** Define the objectives of the Naval Aviation Maintenance Program (NAMP).

An important objective of the NAMP is to achieve and maintain maximum material readiness, safety, and conservation of material. Command attention is required at all levels to meet this objective. Aviation activities base their policies, plans, programs, and procedures on the NAMP.

For specific and detailed information on the programs and processes covered in this manual, you should refer to the *Naval Aviation Maintenance Program* (NAMP), OPNAVINST 4790.2.

*Q1. What are the objectives of the NAMP?*

### AIRCRAFT MAINTENANCE DEPARTMENT ORGANIZATION

**LEARNING OBJECTIVES:** Define the purpose of the Aircraft Maintenance Department within an organization. Identify the two major types of aircraft maintenance, the three levels of aircraft maintenance, and specific responsibilities of the Chief of Naval Operations (CNO) and Naval Supply Systems Command (NAVSUP) concerning the Naval Aviation Maintenance Program (NAMP).

The aircraft maintenance department is usually the largest department in most operating units or activities. The primary effort of this department is to support the unit's mission. The operations department carries out the unit's mission of flight operations by naval aircraft. In support of the unit's mission, the maintenance department must maintain assigned aircraft in a state of full mission capability (FMC). An aircraft in this category can safely perform all of its intended missions and return to its base of operations.

All aircraft maintenance departments have the same basic organization; that is, they have a standard organization throughout the Navy. You can see the advantages of a standard organization if you consider what happens when you transfer from one aircraft maintenance activity to another. Because there is a standard organization, you find that the work centers in both the old and new activity have the same code numbers and names, and that the officers occupy similar billets. So, if you come from another aviation maintenance activity, you can perform in the new unit in a short time. You do not need a long indoctrination or break-in period.

The standard organization of the maintenance department is not limited to the operating activity (squadron) level. Broad avenues of responsibility and certain guidelines are prescribed by the Department of Defense (DOD). They are based upon years of aircraft maintenance experience in the Navy, Army, and Air Force.

*Q2. What is the purpose of the Aircraft Maintenance Department within an organization?*

### MAINTENANCE TYPES, LEVELS, AND RESPONSIBILITIES

The aircraft intermediate maintenance department (AIMD) is a centralized local maintenance organization. AIMDs perform aviation maintenance functions that are beyond the capability of the operating squadron or unit. Capability refers to the scope of the work assigned to an activity by the NAMP. In addition to performing maintenance work on aircraft and equipment, the AIMD maintains equipment pools and issues items of support

equipment (SE) to the squadrons. Squadron maintenance personnel are usually assigned to the squadron maintenance department. However, some personnel may be assigned temporarily to the station's or ship's AIMD.

## Maintenance Types

The term *aircraft maintenance* has a very general meaning. It could mean the maintenance performed in minutes at the squadron level to months of overhaul in an industrial-type facility. More than the words *maintenance* or *aircraft maintenance* are needed to indicate a specific meaning. There are two major types of maintenance—rework and upkeep. Categories within the major types of maintenance are standard rework and upkeep and special rework and upkeep. The following paragraphs discuss these types and categories of maintenance.

**REWORK MAINTENANCE.**—Rework maintenance is the restorative or additive work performed on aircraft, aircraft equipment, and aircraft SE. Naval aviation depots, contractor plants, and other industrial establishments do this type of maintenance. Standard rework and special rework come under the general heading of rework maintenance.

**Standard Rework.**—Standard rework is a comprehensive depot-level inspection of selected aircraft structures and materials, correction of critical defects, incorporation of certain technical directives, and limited removal and rework of scheduled removal components (SRCs). It also includes equipment history record (EHR), assembly service record (ASR), and module service record (MSR) items. Standard rework is commonly known as standard depot-level maintenance (SDLM).

**Special Rework.**—Special rework is work done to aircraft, aircraft equipment, and aircraft SE to improve or change their capability to perform specific functions. This is done by replacing or repairing parts or equipment of the aircraft. Normally, special rework is depot-level work.

**UPKEEP MAINTENANCE.**—Upkeep maintenance is the preventive, restorative, or additive work performed on aircraft, equipment, and SE by operating units and aircraft SE activities. It includes servicing, periodic inspection, functional and bench tests, replacement, preservation, modification, and repair. Upkeep is divided into two categories, standard and special. Military and contractor personnel perform

upkeep. The aircraft controlling custodians (ACCs) manage the process.

**Standard Upkeep.**—Standard upkeep maintenance is the periodic or scheduled work performed on aircraft, equipment, and SE **after** (and as a result of) completion of a prescribed number of flying hours or calendar days. Such work is performed in compliance with prescribed inspection or replacement requirements, and is also known as scheduled maintenance.

**Special Upkeep.**—Special upkeep is the work done to aircraft, equipment, and SE to improve, change, or restore their capability to perform specific mission functions. Special upkeep maintenance includes replacement, removal, addition, alteration, or repair of parts, equipment, or aircraft without regard to flying hours or operating times, and is also known as unscheduled maintenance.

- Q3. *What are the major types of aircraft maintenance?*
- Q4. *The restorative or additive work performed on aircraft, equipment, or support equipment is what type of maintenance?*
- Q5. *Standard rework is also known as what type of maintenance?*
- Q6. *What is special rework?*
- Q7. *Upkeep maintenance is performed by what activities?*
- Q8. *Standard upkeep is also known as what type of maintenance?*
- Q9. *Maintenance performed on aircraft without regard to operating hours or calendar is known as what type of maintenance?*

## Maintenance Levels

All aircraft maintenance functions are divided into three distinct levels—organizational, intermediate, and depot. To determine the extent to which a repair task can be undertaken, the maintenance activity refers to the maintenance instruction manuals (MIMs), the operating and service instruction manuals, or the technical directives (TDs) that pertain to each weapon system or component. The levels of maintenance are discussed in the following paragraphs.

Organizational-level maintenance is work performed by an operating unit on a day-to-day basis in support of its own operations. Maintenance

performed at this level includes line operations, such as servicing, preflight inspections, and minor adjustments in preparation for flight; periodic inspections of aircraft and equipment and the associated tests, repairs, and adjustments that do not require shop facilities; and component removal and installation. This work is done in facilities assigned to the operating units. These facilities may be used exclusively by a single large squadron or they may be shared by one or more smaller units.

In an operating activity, permanently assigned personnel perform O-level maintenance. O-level maintenance at a naval air station (on aircraft assigned to the station) is a function of the operations maintenance division (OMD). When directed by higher authority, the OMD also provides O-level maintenance and other assistance to transient aircraft.

Intermediate-level maintenance is work performed in centrally located facilities for the support of operating activities within a designated geographical area. I-level maintenance work is performed at a particular base or station, or aboard aircraft carriers (CVs/CVNs), and amphibious assault ships (LHDs/LHAs/LPDs). This level of maintenance consists of calibration, off-equipment repair, or replacement of damaged or unserviceable components or assemblies. It also consists of the manufacture of nonavailable parts, periodic inspections, and technical assistance on aircraft components and equipment from supported units.

**NOTE:** The aircraft I-level maintenance department is commonly referred to as the SUPPORTING activity, and the O-level maintenance activity (squadron) is referred to as the SUPPORTED activity.

I-level maintenance activities are manned by a small number of permanently assigned personnel and sea operational detachment (SEAOPDET) personnel, a sea duty component assigned to the shore AIMD, used to augment the aircraft carrier AIMD in support of carrier air wing embarkations. Personnel assigned TAD to intermediate maintenance activities (IMAs) from non-CV deploying squadrons or shore IMA SEAOPDETs should be assigned for the complete deployment cycle. Shore-based Navy squadrons who have I-level billets authorized should assign personnel to the supporting IMA for a minimum of 12 months.

Depot maintenance is work that must be done in industrial-type facilities. Navy depot maintenance activities are manned primarily by civilians, and are

known as naval aviation depots (NAVAVNDEPOTs or NADEPs). The Commander, Naval Air Systems Command (COMNAVAIRSYSCOM or NAVAIR) manages NADEPs. This level of maintenance (standard depot-level maintenance or SDLM) includes overhaul and major repair or modification of aircraft, components, and equipment. It also includes the manufacture of specified aeronautical parts to be stocked as spares, the manufacture of kits for authorized aircraft and the modification of equipment. Installation of these spare parts and incorporation of modification kits may be done at this level or at a lower level of maintenance. Depot-maintenance activities also perform special rework. Some military personnel are usually assigned to the NADEPs for training or to help in performing the I- and O-level maintenance connected to the depot facility.

You can see by the above descriptions that the three levels of aircraft maintenance provide an orderly separation of the various maintenance tasks. These three separate levels of maintenance are needed because of task and equipment complexity, space requirements, the skill level of the assigned personnel, and the scope of support responsibility.

- Q10. Aircraft maintenance functions are divided into how many distinct levels?*
- Q11. What are the distinct levels of aircraft maintenance?*
- Q12. Describe organizational-level maintenance.*
- Q13. What level of maintenance includes the manufacture of non-available parts?*
- Q14. Depot-level maintenance is performed in what type of facility?*

## **Responsibilities**

The Chief of Naval Operations (CNO) sponsors and directs the NAMP. Program administration is through the operational chain of command. The Naval Supply Systems Command (NAVSUP) provides material in support of the operation and maintenance of aeronautical equipment. NAVAIR is responsible for research, design, development, testing, acquisition, and logistic support of all naval aviation procurement relating to aircraft missile targets and associated material and equipment. Some activities may be assigned the intermediate maintenance responsibility for an entire logistic area if requested by the cognizant controlling custodian. Specific activities designated to perform intermediate maintenance are authorized to

perform higher levels of maintenance on systems and equipment unique to the assigned mission. Certain organizational maintenance activities are authorized to perform selective functions in partial intermediate support of their own operations.

Navy shore activities that are assigned I-level maintenance responsibilities have an AIMD to perform assigned maintenance. Those shore activities with assigned aircraft have an OMD within the operations department. This division performs O-level maintenance on assigned aircraft and provides flight line services for transient aircraft.

Naval Air Reserve Units (NARUs) perform both I-level and O-level maintenance on their assigned aircraft; however, the supporting activities provide logistic support. Naval air reserve squadrons perform O-level maintenance on their assigned aircraft while on active duty or assigned to fleet units. During regular scheduled drill periods, they perform maintenance according to the training requirements.

Afloat and shore-based AIMDs are manned in a similar manner. They have a small number of permanently assigned personnel and temporarily assigned maintenance personnel from the embarked squadrons and SEAOPDETS. These temporarily assigned personnel accompany their squadron upon disembarkation. SEAOPDET personnel return to the shore-based AIMD upon completion of the ships deployment.

The CV(N)/CV/LPH/LHA type of ships perform O-level and I-level maintenance on assigned aircraft. They also provide organizational and intermediate material, facilities, and SE needed by the embarked air wing, squadron, and unit.

Squadrons and units perform O-level maintenance on assigned aircraft. While shore based, designated squadron maintenance personnel are temporarily assigned to the AIMD of the supporting station for training and augmentation of the support effort. When afloat, designated squadron maintenance personnel are assigned, as required, to the AIMD of the supporting ship.

Specific squadrons and units, regardless of location, may be required to perform I-level maintenance functions on systems and equipments unique to their assigned aeronautical equipment and activity mission. Supporting ships or stations provide material, facilities, and SE. They also provide selected quantities of readily transportable material and SE as organizational property to the squadron or unit.

*Q15. The Chief of Naval Operations (CNO) has what responsibilities to the Naval Aviation Maintenance Program?*

*Q16. Who is responsible for providing material in support of the operation and maintenance of aeronautical equipment?*

## **AIRCRAFT MAINTENANCE DEPARTMENT FUNCTIONS**

**LEARNING OBJECTIVES:** Identify the structure of the aircraft maintenance department. Describe the divisions of the intermediate and organizational levels of maintenance within the department.

The aircraft maintenance department supports naval operations by the upkeep of aircraft and associated SE to the assigned level of maintenance. This support is accomplished by complying with the *Naval Aviation Maintenance Program* (NAMP), OPNAVINST 4790.2. Since all maintenance activities have similarities in mission, operation, and administration, these areas have standardized organization and administration. A maintenance department aids in improving the following areas:

- Performance and training of maintenance personnel
- Aircraft, equipment, and system readiness
- Maintenance integrity and effectiveness for all material
- Safety
- Usage of maintenance manpower and materials
- Planning and scheduling of maintenance work
- Management and evaluation of work performance
- Quality of the end product
- Attainment and retention of combat readiness
- Continuity when aircraft or personnel are transferred between commands

All personnel engaged in maintenance tasks work toward a common goal of assuring achievement in the above areas. They work under the management control process used in the aircraft maintenance department organization.

Some of the functions of an aircraft maintenance department are as follows:

- Periodic maintenance and routine inspection and servicing of aircraft, associated SE, and aeronautical material and components. Maintenance and inspection include the necessary disassembly, cleaning, examination, repair, modification, test, inspection, assembly, and preservation.
- Special work (when required) to comply with TDs or local instructions.
- Correction of aircraft and equipment discrepancies.
- Assurance of high quality in all work.
- Maintenance of required records and technical publications.
- Maintenance and custody of tools and other equipment provided the activity for its own use.
- Training of assigned personnel.
- Conducting maintenance and ground-handling safety programs.
- Submission of reports for statistical, analytical, and historical purposes.

The depth and complexity of specific functions vary with the number and type of aircraft involved and the assigned maintenance level. This chapter covers the aircraft maintenance organizations for the 0- and I-level maintenance activities. You will probably be assigned to an activity that performs only 0- or I-level maintenance.

### **Organizational Structure Relationships**

The organizational structure of aircraft maintenance activities uses the principles and concepts of modern management. This structure incorporates the basic aspects of organizing-pinpointing responsibilities, span of control, alignment of functions, division of work, uniformity of assignments, and delegation of authority commensurate with the assignment of responsibility.

A line relationship (normally shown by a solid vertical line on an organizational chart) is a relationship that exists between a superior and subordinate within both staff and line segments of the organization. This relationship involves the direct supervisory functions of assigning work to subordinates and appraisal of performance.

On the other hand, a staff relationship (normally shown by a solid horizontal line feeding into the main arteries of the organizational chart) exists between an advisory staff supervisor and a production line supervisor. The sole concern of staff personnel is to service and support the production effort.

### **Management**

Management exercises the authority and takes the responsibility for the performance of the mission, tasks, and work of the maintenance department. The organizational structure lets the aircraft maintenance officer (AMO) (with the aid of subordinate officers) manage the maintenance department. The AMO is responsible to the commanding officer for the accomplishment of the department's mission. The AMO directs the maintenance department according to directives from higher authority.

The functional management responsibilities assigned to the AMO are planning, control, and production. Also, the AMO estimates and programs facilities, equipment, manpower, and training requirements. With subordinate maintenance department officers, the AMO provides direction and guidance to subordinate divisions. The subordinate divisions implement and comply with all local- and higher-authority maintenance policies and technical directives. Normally, the following subordinate officers assist the AMO in the management of the maintenance department:

- Assistant aircraft maintenance officer. This officer ensures that the staff divisions conform to established policies involving quality assurance and supervises maintenance administration and department training.
- Maintenance material control officer. This officer is directly responsible to the AMO for the overall productive effort and material support of the department,
- Aircraft maintenance division and branch officers. These officers organize and manage their respective divisions and branches.

Specific responsibilities of these officers are outlined in OPNAVINST 4790.2. The organization of the maintenance department provides firm lines of authority from the AMO to the personnel who do the work for which the department is responsible. Major segments, called divisions, of the department report directly to the department head. Several branches

report to each division and at the lowest organizational level, sections report to each branch.

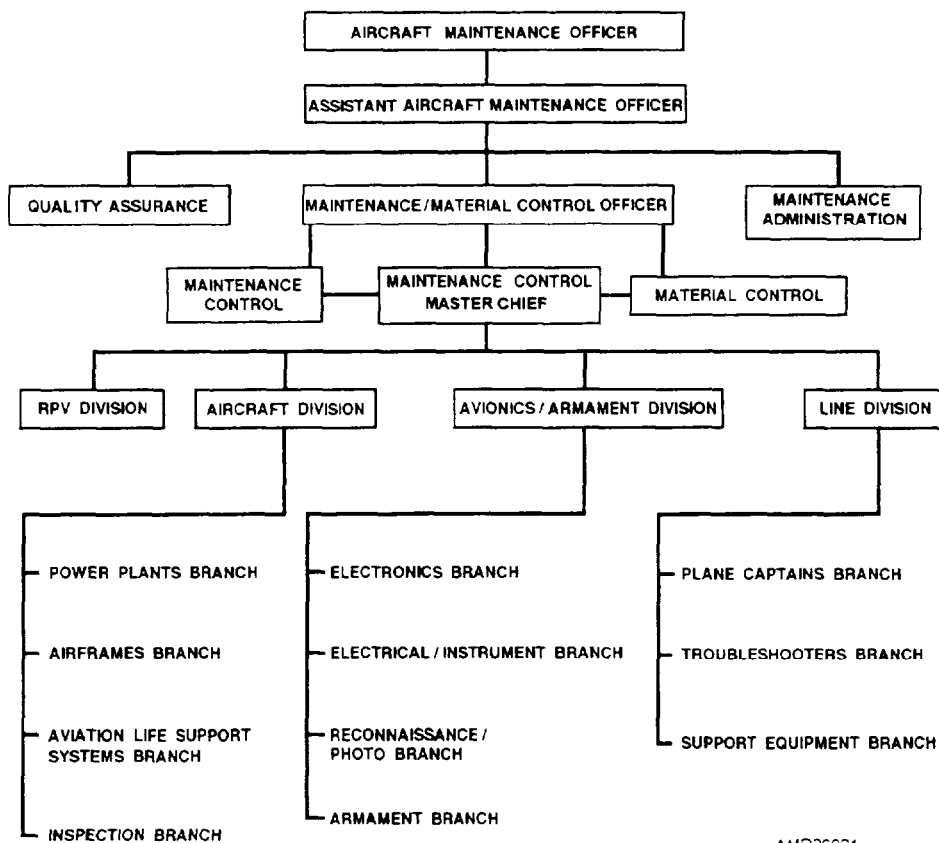
- Q17. What is a "line" relationship?
- Q18. A relationship that exists between an advisory staff supervisor and a production line supervisor is known as what type of relationship?
- Q19. Who is responsible to the commanding officer for the accomplishment of the maintenance department's mission?
- Q20. What are the functional management responsibilities of the aircraft maintenance officer?
- Q21. What subordinate officers assist the aircraft maintenance officer in the management of the maintenance department?
- Q22. What officer is responsible for ensuring that staff divisions conform to established policies?
- Q23. In addition to material support, what is the maintenance material control officer's direct responsibility?

## Organizational Level (O-Level)

Organizational maintenance activities (OMAs) are the main users and operators of naval aircraft. Therefore, most of their maintenance tasks are the day-to-day support for their own operations. OMAs have maintenance managers who manage the activity, staff divisions that perform support-type functions for the production elements, and production divisions that actually perform the various maintenance tasks.

Figure 1-1 shows the organization chart of the different work centers in an O-level maintenance department. Typical work centers are maintenance control, the power plants branch of the aircraft division, and the electronics branch of the avionics/armament division.

**STAFF DIVISIONS.**—At OMAs, staff divisions provide services and support to the production divisions. Maintenance administration and quality assurance (QA) divisions link the progress of the production divisions. Together, they provide the AMO with a view of the current status of the maintenance



AMR00001

Figure 1-1.—O-level maintenance department organization.

department. In this section, you will be introduced to the staff divisions and their duties and responsibilities.

**Maintenance Administration.**—The maintenance administration provides administrative services for the maintenance department. It prepares maintenance-related correspondence that requires special attention by the AMO or higher authority; maintains files of maintenance-related correspondence and nontechnical publications and instructions; and ensures distribution of incoming messages, correspondence, and other data, including official and personal mail. It also coordinates department administrative security responsibilities with other departments and divisions; and maintains personnel assignment records for the department.

**Quality Assurance.**—The idea of QA is to prevent defects from occurring from the start of a maintenance operation to its finish. QA is the responsibility of all personnel. Its achievement depends upon prevention, knowledge, and special skills.

- **Prevention** is making sure that there are no maintenance failures. It extends to the safety of personnel, to the maintenance equipment, and to all aspects of the total maintenance effort. Prevention allows you to regulate events rather than have them regulate you.

- **Knowledge** is factual information. It includes data collection and analysis for acquiring knowledge to prevent defects.

- **Special skills** are required of a staff of trained personnel for the analysis of data and supervision of QA.

The objective of QA is to readily pinpoint problem areas so that management can accomplish the following:

- Improve the quality, uniformity, and reliability of the total maintenance effort

- Improve the work environment, tools, and equipment used in the maintenance effort

- Eliminate unnecessary man-hour and dollar expenditures

- Improve training, work habits, and procedures of maintenance personnel

- Increase the excellence and value of reports and correspondence originated by maintenance personnel

- Effectively disseminate technical information

- Establish realistic material and equipment requirements in support of the maintenance effort

- Effectively support the Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP)

- Support the Foreign Object Damage (FOD) Prevention and Reporting Program

Normally, QA work spaces are near the production divisions and the AMO.

**System Administrator/Analyst.**—The system administrator/analyst (SA/A) provides analytical information for the AMO's review of management practices within the organization. An SA/A will be established in O-level activities to monitor, control, and apply the MDS within that activity. The SA/A serves as a point of contact between work centers and the data services facility (DSF), and is responsible for all aspects of the maintenance data system (MDS), including Naval Aviation Logistics Command Management Information System (NALCOMIS) reports and inquiries. If an activity is operating with VIDS, the analyst will be assigned to QA/A.

The requirements for analysis stem from many sources and apply to a wide range of maintenance subjects. At times, analysis is initiated to provide an answer to a specific problem. At other times, analysis of selected areas of maintenance may be initiated by a monitoring action. Some of the more important responsibilities of the SA/A are as follows:

- Coordinate and monitor the MDS/NALCOMIS for the department.

- Review maintenance data reports (MDRs) to identify trends.

- Use the MDWNALCOMIS to assist in identifying possible deficiencies in technical training or documentation procedures.

- Monitor the assignment of the third position of work center codes.

- Collect, maintain, and distribute in narrative, tabular, or chart or graph form the data required to monitor, plan, schedule, and control the maintenance effort.

- Develop charts, graphs, and displays for command presentation.

- Assist the AMO and other supervisory personnel in determining the specific goals for new types of data reports required for managing the maintenance effort.

- Identify and apply analytical techniques to areas of material deficiencies, high man-hour consumption, or other pertinent trends.
- Provide assistance to production control or maintenance/material control in determining material consumption and usage based on MDS or NALCOMIS reports and inquiries.
- Coordinate all MDR matters with the DSF.

**MAINTENANCE MATERIAL CONTROL.**—The maintenance material control officer (MMCO) exercises authority in a line position between the AMO and the production divisions. The MMCO is directly responsible to the AMO for the overall productive effort and material support of the department. Maintenance material control normally has two work areas—one for maintenance control and one for material control.

**Maintenance Control Work Center.**—The maintenance control work center is usually referred to as *maintenance control* or the *maintenance control* office. Maintenance personnel use these terms interchangeably. Maintenance control is the nerve center of the maintenance department. The MMCO is its head. This officer, assisted by the maintenance control chief, directs the production divisions. He or she makes sure there is prompt movement of aircraft, parts, and materials. The MMCO also maintains liaison with the supporting activity to ensure that the department's workload requirements and productive capability are compatible. Under his or her direction maintenance control personnel plan, schedule, and provide positive control of all maintenance performed on or in support of assigned aircraft.

**Material Control Center.**—Material control center personnel provide material and supply support to the department. An effective aircraft maintenance department program depends upon a cooperative working relationship between production and supply. In the organizational maintenance department, the material control center acts as a liaison between the maintenance department and the local supply activity.

Personnel in the material control center make sure that the proper parts, tools, and equipment are available to the production divisions in the required quantity and at the proper time. Material control center personnel compile and analyze maintenance usage data. They furnish technical advice and information to the local supply activity on the identity and quantity of supplies, spare parts, and materials necessary for the assigned workload.

**PRODUCTION DIVISIONS.**—Aviation mechanics and technicians maintain naval aircraft and staff the production divisions. The production element of an O-level maintenance activity consists of the four divisions shown in figure 1-1. They may be subdivided into branches and sections to perform the required maintenance tasks more effectively. A discussion of the more important production divisions is presented in the following paragraphs.

**Remotely Piloted Vehicle (RPV) Division.**—An RPV division (previously Target Division) is optional, and may be established when responsibilities concerning the operation and maintenance of aerial or surface targets are extensive. The RPV division coordinates and completes periodic maintenance, inspections, decontaminations, and rehabilitation of assigned RPVs.

**Aircraft Division.**—The aircraft division has several branches. The *power plants branch* is manned by Aviation Machinist's Mates (ADS), who maintain aircraft power plants and their related systems and components. The *airframes branch* is manned by Aviation Structural Mechanics (AMHs-Hydraulics and AMSs-Structures), who maintain the structural systems of the aircraft, landing gear, fuselage, etc. The *aviation life support systems branch* is manned by Aircrew Survival Equipmentmen (PRs) and Aviation Structural Mechanics (AMES-Safety Equipment). PRs maintain parachutes, life rafts, emergency equipment kits, and flight clothing. AMES maintain oxygen, pressurization, air-conditioning systems, and other emergency equipment. The *inspection branch* is headed by an inspection supervisor who performs all maintenance control functions (except cannibalization) of aircraft undergoing a phase inspection.

**NOTE:** Many commands have a permanent inspection work center that has one person of each rating assigned, as necessary, for the inspection process. In some activities, a temporary crew may be established.

**NOTE:** All work centers have a responsibility for corrosion. Additionally, most activities may have a permanent corrosion work center staffed by personnel from several ratings.

**Avionics/Armament Division.**—The avionics/armament division has several branches. The *electronics branch* is normally manned by Aviation Electronics Technicians (AT[O]s) who perform organizational-level preventive and corrective



maintenance on aviation electronics systems, including communication, radar, navigation, antisubmarine warfare sensors, electronic warfare, data link, fire control, tactical displays, and associated equipment. The *electrical and instrument branch*, staffed by Aviation Electrician's Mates (AEs), maintains the batteries and aircraft electrical and instrument systems. The *armament branch* is manned by Aviation Ordnancemen (AOs) who maintain armament and ordnance-related equipment.

- Q24. What is the concept of quality assurance?
- Q25. The achievement of quality assurance depends on what factors?
- Q26. What is the purpose of the system administrator/analyst at the organizational maintenance level?
- Q27. Who has the responsibility, as well as many other responsibilities, to identify material deficiencies and high man-hour consumption trends?
- Q28. What work center plans, schedules, and provides positive control of all maintenance performed on or in support of the activities assigned aircraft?
- Q29. What branches or work centers make up the aircraft division?
- Q30. The avionics/armament division consists of what work centers?

**Line Division.**—Personnel from many different aviation ratings normally man the line division.

Personnel who are assigned to the line division might be aviation machinist's mates, structural mechanics, electricians mates, or even personnel who are striking for the Aviation Storekeeper (AK) and Aviation Maintenance Administrationman (AZ) clerical ratings. This is the division to which you will probably be assigned first. Here, you will be introduced to the types of aircraft that are flown in your squadron. Chapter 5 of this TRAMAN covers the line division in detail.

### Intermediate Maintenance (I-Level)

The primary mission of I-level maintenance is to enhance and sustain the combat readiness and mission capability of supported activities. I-level maintenance does this by providing quality and timely material support at the nearest location with the lowest practical resource expenditure. I-level maintenance is usually performed in a centrally located area in support of operating aircraft on shore stations, aboard ships, or within designated areas.

Intermediate maintenance activities (IMAs) are not assigned aircraft for operational purposes. They concentrate their efforts on repairing and testing aircraft components.

The organizational structure of the IMA is similar to the organizational structure of the OMA. But, because the IMA is larger than the OMA, it has more divisions. The I-level maintenance organization is made up of maintenance managers, staff divisions, and production divisions, which are shown in figure 1-2.

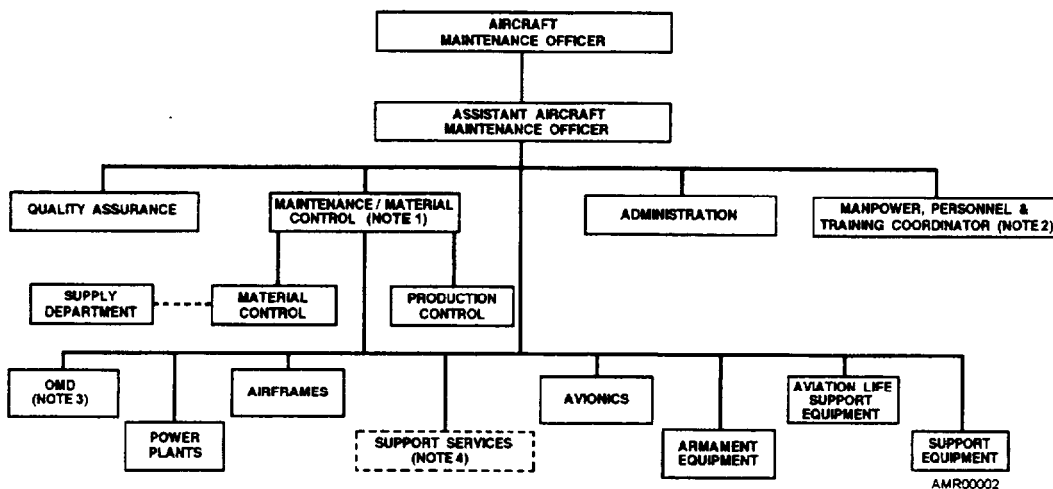


Figure 1-2.—Intermediate-level maintenance department organization (ashore).

**STAFF DIVISIONS.**—The staff divisions of the I-level maintenance department provide services and support to the production elements. They serve in much the same way as the QA division and maintenance administration division of an O-level activity.

The administration division functions as the coordinator for all records and reports, directives, correspondence, and personnel matters for the department. Personnel in the I-level administration division perform the following duties:

- Conduct liaison with the administrative department regarding department personnel
- Safeguard and distribute personal mail to department personnel, when appropriate
- Control the classified matter required by the department
- Distribute approved locally issued reports and studies
- Coordinate transportation and communication requirements for their department
- Establish and coordinate the department training requirements, and obtain any school quotas needed to support these requirements
- Assign spaces to the various divisions, and establish the responsibility for security and cleanliness of such spaces
- Assume the responsibility for the cleanliness and security of vacant or unassigned maintenance spaces
- Arrange department participation in joint inspections of facilities assigned to tenant activities, especially incident to the arrival or departure of a tenant activity

The QA division of I-level maintenance activities has the same primary functions as those of organizational activities—to prevent the occurrence of defects. Personnel in this division use statistical analysis to compare the results obtained with the results desired. Through research, they find methods of improving effectiveness of the overall maintenance effort. The objectives of the QA division in I-level maintenance are identical to the objectives of QA in O-level maintenance activities.

**MAINTENANCE MATERIAL CONTROL.**—In an intermediate activity, maintenance material control is organized much like the maintenance material control of the organizational activity. It has

two work centers—production control and material control.

Production control is the central point of the entire maintenance effort. IMAs exist to support operating activities. Personnel working in the production control work center plan and schedule the workload. The workload consists of repairing, testing, and processing aircraft parts, components, and related equipment.

Intermediate activities tend to be large. Because of this tendency, the location of various work centers, and the number of components handled daily, it is not practical to control each component inducted from a central production control area. Production control delegates some of its functions to certain selected production divisions. These divisions are responsible to production control for the production efforts of their assigned work centers, scheduling components into work centers, and assigning priorities as directed by production control.

The maintenance data base administrator/analyst (MDBA/A) provides qualitative and quantitative analytical information to the AMO via the MMCO for continuous review of management practices within the department or activity. The MDBA/A is established at the I-level to monitor, control, and apply the MDS. The MDBA/A also serves as a contact point between work centers and the DSF, and is responsible for the management of all aspects of the MDS including NALCOMIS reports and inquiries at the I-level. Specific responsibilities of the MDBA/A are parallel to that of the SA/A at the O-level. If an activity is operating with VIDS, the analyst will be assigned to QA/A.

Production control cooperates with staff members. It uses staff findings and recommendations to improve the overall maintenance effort. Together with the administration division, the QA division and the MDBA/A, maintenance material control provides the intermediate aircraft maintenance officer with a complete picture of the maintenance situation for any given time, and also makes recommendations for improvement.

The material control center coordinates and controls the supply functions of the department. It acts as a liaison between the department and the local supply activity. It processes all supply and material transactions for the other divisions of the department. Other functions of the material control center are as follows:

- Requisitions material

- Maintains the material control register
- Maintains inventories of materials on hand
- Maintains subcustody records for accountable items held by the department
- Maintains records of all material transactions and accounts for the expenditures of funds by the department
- Furnishes technical advice and information to the local supply activity concerning material requirements for the assigned workload

In IMAs, the material control center has an aeronautical material screening unit (AMSU). This unit coordinates the screening of received materials and parts to determine the status and repair responsibility and capability.

**PRODUCTION DIVISIONS.**—Normally, the I-level maintenance organization consists of six production divisions, as shown in figure 1-2. The six production divisions are power plants, airframes, avionics, armament equipment, aviation life support equipment, and support equipment. In this chart you can see that if the OMD and IMA are combined, an organizational maintenance division is established. Additionally, a support services division may also be established if so desired. However, this discussion deals with the six normal production divisions and their responsibilities, minus organizational maintenance and support services divisions.

The type of work that you will perform is the same regardless of the maintenance level at which you are working. If you are an AD, you will work on engines. If you are an AE, you will work on instruments and electrical equipment. If you are an AT, you will work on avionics equipment. However, the work that you will perform is at a level beyond the capability of the supported activity. In this section, the more important responsibilities and functions of these divisions are presented.

Power Plants. ADS staff the power plants division. They perform maintenance on power plants, power plant components, and associated systems.

Airframes. AMs are assigned to work centers in the airframes division. The airframes division is responsible for the specified level of maintenance for the airframe and structural components; moveable structures and surfaces, including their hydraulic and pneumatic control and actuating systems and mechanisms; air-conditioning, pressurization, visual

improvement, oxygen, and other utility systems; and seat and canopy ejection systems and components.

Avionics. The avionics division is staffed with the appropriate combination of ratings to provide maintenance of avionics equipment for the supported activities: AEs maintain aircraft electrical and instrument systems. AT(I)s perform intermediate-level preventive and corrective maintenance on aviation electronic components supported by conventional and automatic test equipment, including repair of weapons replaceable assemblies (WRA) and shop replaceable assemblies (SRA). The AT also performs microminiature (2M) component repair, and performs test equipment qualification and associated test bench preventive and corrective maintenance.

Armament Equipment. AOs are assigned to the armament division. They maintain aircraft armament equipment and aviation ordnance equipment.

Aviation Life Support Equipment. PRs are assigned to the aviation life support equipment division. This division is responsible for intermediate maintenance in connection with parachutes, life rafts, pressure suits, oxygen masks, emergency equipment kits, flight clothing, oxygen regulators, automatic parachute actuators, and aviators' protective helmets, etc. AME personnel also may be assigned to this division for upkeep and support of the oxygen system, pressurization and air-conditioning systems, and other emergency equipment as assigned within the scope of that rating.

Support Equipment (SE). The Aviation Support Equipment Technician (AS) performs the necessary maintenance on the SE assigned to the maintenance department and supported activities. SE includes such items as test stands, workstands, mobile electric power plants, and pneumatic and hydraulic servicing equipment.

- Q31. What is the purpose of the production control work center?*
- Q32. At the intermediate maintenance activity, who provides qualitative and quantitative analytical information to the AMO?*
- Q33. At the I-level, power plants, airframes, avionics, armament equipment, support equipment, and aviators' life support equipment are known as what type of divisions?*

## NAVAL AVIATION LOGISTICS COMMAND MANAGEMENT INFORMATION SYSTEM (NALCOMIS)

LEARNING OBJECTIVE: Define the purpose of the Naval Aviation Logistics Command Management Information System (NALCOMIS)

NALCOMIS provides OMA, IMA, and aviation supply department (ASD) activities with a modern, real time, responsive, computer-based management information system. This automation helps us do our jobs better and more efficiently by reducing paperwork. NALCOMIS is not available at all aviation commands. If your command has not yet implemented NALCOMIS, then VIDS/MAFs will still be the means of performing and tracking maintenance. There are three basic objectives of NALCOMIS.

- To increase aircraft readiness by providing focal maintenance and supply managers with timely and accurate information required in their day-to-day management and decision-making process
- To reduce the administrative burden of the fleet
- To improve the quality of up-line reported data

Figure 1-3 shows a NALCOMIS generated repair document. The information offered and data fields are the same as a VIDS/MAF; however, Conversation codes are used to input information. OPNAVINST 4790.2, Vol III, offers more detailed information on the NALCOMIS system.

NOTE: NALCOMIS specific documentation procedures, input formats, and output formats are contained in the *NALCOMIS End User Manuals* for OMA, *System Administrator (SA) Manual* for OMA, *Security Feature User's Guide* for OMA, *NALCOMIS IMA Desk Top Reference Guides*, and the *NALCOMIS IMA User's Manual*.

- Q33. *What is the purpose of NALCOMIS?*
- Q35. *What are the three basic objectives of NALCOMIS?*
- Q36. *If an I- or O-level activity does not yet operate under NALCOMIS, under what system do they document their maintenance?*

## VISUAL INFORMATION DISPLAY SYSTEM (VIDS) BOARD

LEARNING OBJECTIVES: Define the purpose of the Visual Information Display System board in aircraft maintenance. Identify the flow of a Visual Information Display System/Maintenance Action Form (VIDS/MAF) at the organizational and intermediate levels of maintenance.

All maintenance managers have the responsibility to manage their resources efficiently. To do this, they must maintain control of the different elements within their area of responsibility. Effective control depends upon the availability of status information on these elements. The VIDS provides this information. Communication between maintenance control, work centers, and material control is important to make sure the VIDS operation is successful. To record this communication, we use VIDS boards and VIDS forms, which are discussed in the following paragraphs.

### O-LEVEL VIDS BOARD

In the work center, the VIDS board is set up like the VIDS board shown in figure 1-4. This is a 25-pocket board. Most work centers can show all the necessary information on a board of this size. However, the number of aircraft and systems determines the number and size of boards that a work center needs. If work is shown by personnel assignment, the number of people assigned determines the size and number of VIDS boards used in the work center. The work centers should verify their VIDS boards with the maintenance control VIDS board at least once a day.

- Q37. *What element is important to ensure successful operation of the Visual Information Display System (VIDS)?*
- Q38. *With regard to the VIDS board, what action should take place with maintenance control on a daily basis?*

### Information Displayed

Some of the types of information that can be shown on the VIDS board include personal history and information cards, personnel training inserts, and SE required by the work center. The personal history and information cards are placed in the far left-hand side of the board, if the work center is using the bureau/side

```

. ENTRIES REQUIRED SIGNATURE
. NONE LOGS REC
.   X                AJSTYLES

```

## LOCAL USE

## REFERENCE

[illegible]

.....REPAIR CYCLE.

CORRECTIVE ACTION TIGHTENED LOOSE LEADS

JOB CONTROL NUMBER	WORK	INSPT					
ORG DAY SER SUF	CENTER	STATUS	JCN	PRI	TURN-IN DDSN	SYSTEM/REASON	MCN
D98020099	91A	UP		3		AIR START	SWP4826

AMR00003

**Figure 1-3.—NALCOMIS Repair Document.**



[illegible]

**Figure 1-5.—Organizational VIDS board (bureau/side number method).**

WORK CENTER 220																								
RATE NAME		IN WORK					QUALIFICATIONS																	
AEC	A.B. SEAMAN																							
AE1	J.A. DOE																							
AE2	J.R. FROST																							
AE3	M.N. CHRISTMAS																							
AE3	W.T. DOOR																							
AEAN	P.T. BOAT																							
AN	J.T. BOATE																							
AN	V.C. PISTOL																							
SIDE NO.		AWM					AWP																	
401																								
402																								
403																								
404																								
405																								

**Figure 1-6.—Organizational VIDS board (personnel assignment number method).**

- Orange. SE partially down.
- Green. Personnel shortage. A green signal tab indicates that the personnel required to maintain a particular system are not available because they are on leave or have temporary duty requirements.

## VIDS Operating Procedures

In this section, you will see how maintenance control uses the VIDS board. While reading this section, you should refer to figure 1-7. Maintenance

control receives discrepancies from sources such as pilots, aircrews, and maintenance personnel; or maintenance control might initiate a directed discrepancy (such as cannibalization). After maintenance control completes their required blocks of the VIDS/MAF, they forward copies 1 and 5 to the Work center for discrepancies found on the aircraft or SE.

The work center places copies 1 and 5 on the VIDS board under the applicable column (AWM or In Work), as directed by maintenance control. Any time the status of a discrepancy changes (for example, has been In Work and goes to AWP status or back to AWM status), maintenance control must be notified immediately. *Maintenance control must be in control of all maintenance at all times.* The VIDS/MAF should always be kept in the appropriate column, both in the work center and maintenance control.

Often a replacement part is required. To show Work stoppage for parts, mark the VIDS/MAF with the correct information in the H-Z Failed/Required material section. Then, obtain a supply priority and

project code from maintenance control and advise material control of the parts requirement. Finally, move the VIDS/MAF to the AWP column of the VIDS board. When the replacement part is received, the In Work or AWM status is entered, as appropriate, on the VIDS/MAF in addition to the date received in Block B53. If maintenance control authorizes the work to be started, the VIDS/MAF is moved to the In Work column of the VIDS board.

**NOTE:** A discrepancy may go through the AWM, In-Work, and AWP process many times before it is corrected. If so, follow the above steps each time the status of a discrepancy changes.

### VIDS/MAF Flow

Figure 1-7 shows the VIDS/MAF flow throughout the maintenance effort. Maintenance control is notified when all corrective actions have been completed. QA must be notified if any QA inspections or check flight requirements are needed as a result of the maintenance actions.

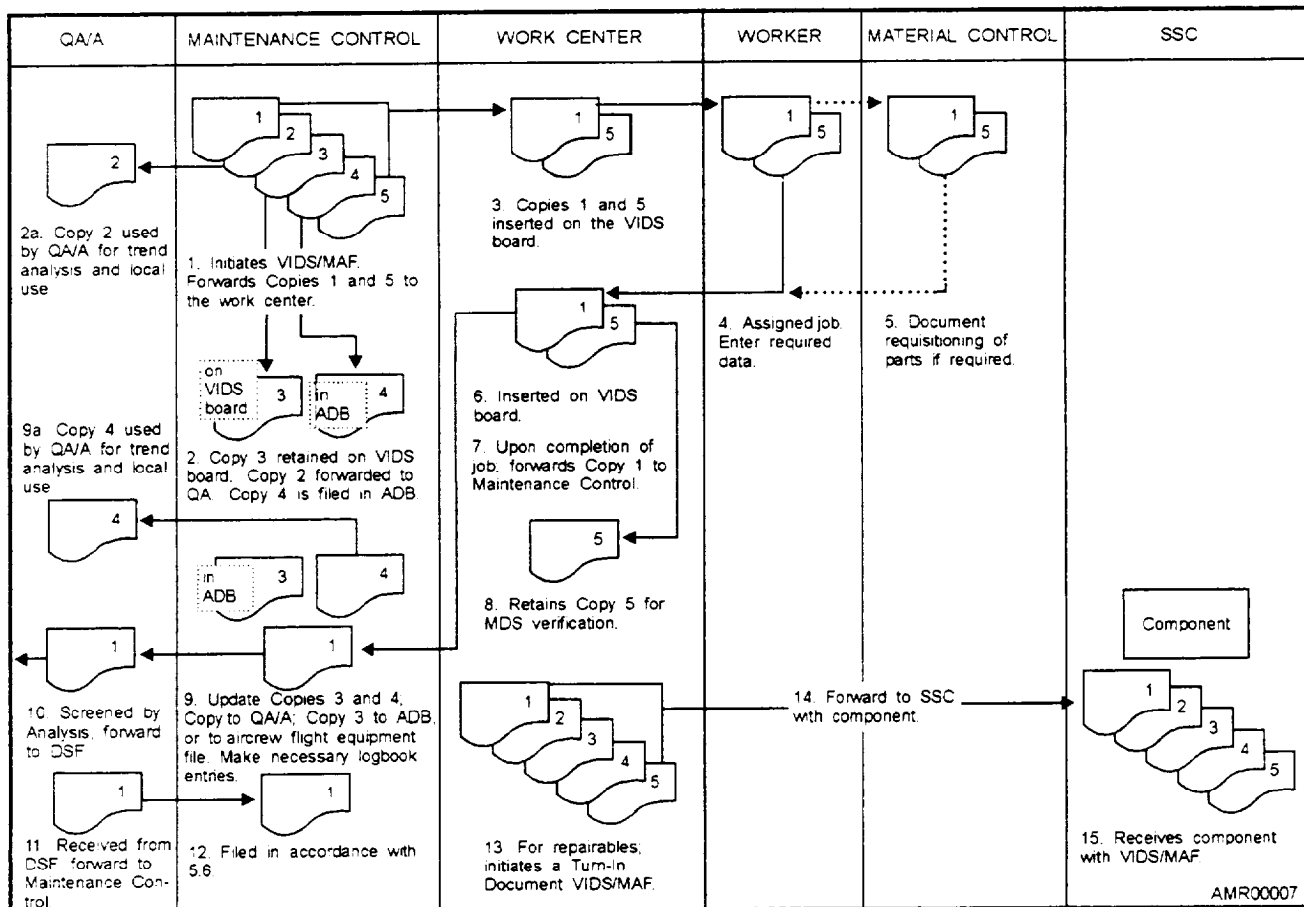


Figure 1-7.—Organizational maintenance (O-level) VIDS/MAF document flow chart.



At this time, all necessary actions should have been made on the VIDS/MAF. The completed copy 5 is filed in a temporary file in the work center.

When the supervisor signs the VIDS/MAF, it means that the maintenance action is complete, that tool control inventories have been conducted at the proper intervals, that QA measures have been met, and that the documentation is complete and correct.

Copy 1 of the completed VIDS/MAF is forwarded to maintenance control. After verification of the work center's copy 5 with the VIDS/MAF copy 1 Daily Audit Report, copy 5 is maintained or destroyed, as required by local command policy.

*Q39. Upon initiation of a VIDS/MAF at the organizational level, which copies are forwarded to the work center?*

*Q40. What must be done if a maintenance action results in the requirement of a check flight?*

*Q41. Upon the completion of a maintenance action and when the VIDS/MAF is completed, which copy is forwarded to maintenance control?*

## I-LEVEL VIDS BOARD

A visual display of all current weapons systems or repairable component status is as necessary at the I-level of maintenance as it was at the O-level of maintenance. The VIDS/MAF flow for the I-level is shown in figure 1-8. The same forms are used at this level—VIDS/MAF and signal tabs.

### Information Displayed

VIDS/MAFs are used at the I-level of maintenance in the same way that they are used at the O-level of maintenance. The VIDS/MAF is used to report maintenance repair actions. The signal tabs are used in much the same way at I- and O-level maintenance, but with the following differences:

- Orange. Bench/equipment inoperable
- Yellow. Bench/equipment partially capable
- Green. Local Repair Cycle Asset (LRCA) at low level
- Blue. LRCA at zero level (critical)
- Red. Expeditious repair

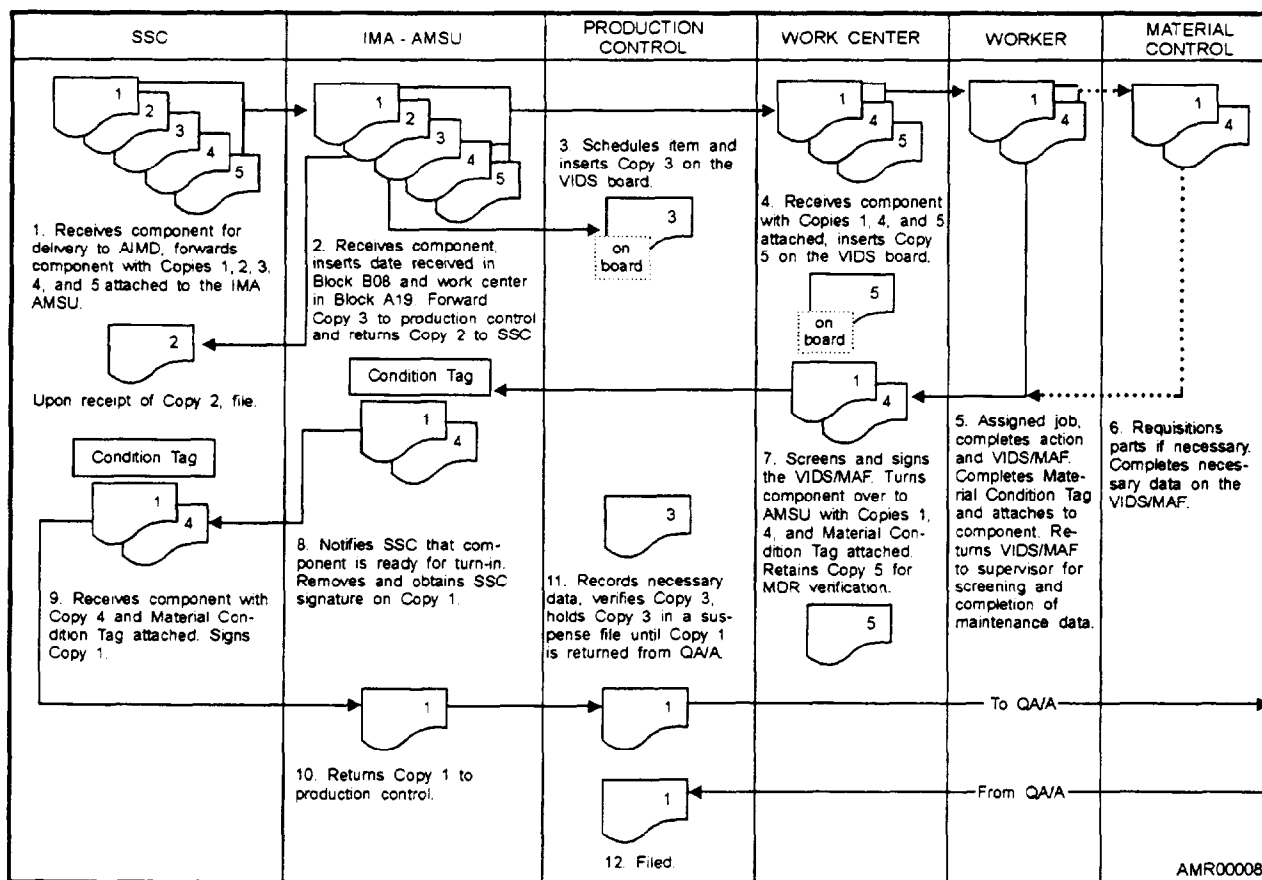


Figure 1-8.—I-level maintenance VIDS/MAF document flow chart.

## VIDS Operating Procedures

The work center receives copies 1, 4, and 5 of the VIDS/MAF with the nonready-for-issue (non-RFI) component. The work center supervisor puts copy 5 on the work center VIDS board in the pocket next to the applicable work unit code (WUC)/LRCA number/part number/name under the In-Work column. Copies 1 and 4 are kept with the inducted equipment throughout the maintenance cycle. If the job is not assigned by production control, copy 5 is placed under the AWM column. Any status changes, such as from In Work to AWP or In Work to AWM, must be reported to production control. Copy 5 is then placed under the correct column of the work center VIDS board.

When a component goes to an AWP status and after appropriate entries have been made on the VIDS/MAF, that component should be packaged and preserved. Then, it is sent to the AWP unit or its equivalent. Copies 1 and 4 of the VIDS/MAF stay with the component. Copy 5 of the VIDSMAF is moved to the AWP column of the work center VIDS board.

When the component is in a ready for issue (RFI) or beyond capability of maintenance (BCM) condition, the necessary entries are made on all copies of the VIDSMAF (including date). Copy 5 is placed in a temporary file until it is verified against the daily audit report (DAR). Components that are BCM have the Type Equipment code and job control number (JCN) entered in the Remarks block of the attached Material Condition Tag (DD Form 1577-2/1577-3).

The supervisor's signature on the VIDS/MAF means that the following actions have been taken:

- Maintenance actions have been completed.
- Too! control inventories have been held at the appropriate times.
- The component has been adequately preserved and secured for routing to the AMSU.
- Documentation is correct.
- QA measures have been met.

The work center supervisor is also responsible for maintaining the work center's VIDS board. As shown in figures 1-9 and 1-10, this board provides the status for In-Work, AWM, and AWP components by WUC, pool index number, or part number within the work center.

**NOTE:** It is not mandatory that the VIDS boards be set up exactly as they are shown in this chapter. However, In-Work, AWM, and AWP must be visually shown by WUC, pool index, or part number at the I-level of maintenance.

The production control supervisor should establish a schedule to make sure that all work centers verify the production control VIDS board at least daily.

*Q42. What does a red signal tab on an I-level VIDS board or VIDS/MAF indicate?*

*Q33. Upon induction of a non-RFI component to an I-level activity, where are copies 1, 4, and 5 of the VIDS/MIF routed?*

WORK CENTER 610					
WUC	P/N	LRCA#	AWM	IN WORK	AWP
71430					
71431	1091295	110			
71432	54400428	145			
71480					
71481	522-2537-00	65			
71482	5253667-00	170			
72360					
72361	1268-2904	160			
72362	3161522	205			
73510					
73511	6707420002	125			
73512	6709017003	270			

AMR00009

Figure 1-9.—Work center 610 VIDS board.

WORK CENTER 630												
RATE	NAME	IN WORK				QUALIFICATIONS						
ATC	Q.R. JONES											
AT1	S.T. GRAY											
AT2	U.V. BROWN											
AT3	W.X. SMITH											
AT3	Y.Z. GREE											
ATAN	A.B. WHITE											
ATAN	C.D. JONES											
WUC	P/N	LRCA#	AWM				AWP					
74240												
74241	616R424001	155										
74242	615R584001	85										
74243	614R379G01	180										
77110												
77111	474100-1	360										
77112	474200-3	315										
77113	474150-3	130										

AMR00010

Figure 1-10.—Work center 630 VIDS board.

Q33. At the I-level, what happens to a repairable component for which parts have been ordered?

## ADMINISTRATIVE FORMS AND DOCUMENTS

**LEARNING OBJECTIVE:** Identify the forms and documents used in the maintenance administration section, their purpose, and use.

The Aviation 3-M Maintenance Data System (MDS) provides a mechanized collection and processing of statistical data. This is essential to the management of resources. The maintenance worker records most of this data on prescribed forms. As a mechanic or technician, you will be required to initiate or complete various forms. A brief description of some of these forms and related data is given in the following text. For more detailed instructions on filling out these forms, refer to OPNAVINST 4790.2. Personnel having responsibilities under NALCOMIS should refer to the *NALCOMIS User's Manual*.

## DATA ACCURACY

Accurate documentation is necessary. Each MDS document that is not correct causes a loss of effectiveness of the data and of the system in general. The data must be accurate and complete because it has Navy-wide application.

## VIDS/MAINTENANCE ACTION FORM (MAF)

O- and I-level maintenance activities use the VIDS/MAF, OPNAV 4790/60 (fig. 1-11), or NALCOMIS to report on equipment maintenance actions. They also use one of the two methods to document the removal and processing of a repairable component or item to AIMD. For the VIDS/MAF, copies 1, 3, 4, and 5 of the form contain the same information. Copy 2 is a tear-out that contains the necessary data for material reporting. Copy 3 is perforated along the fold line to make it easier to fold the form for insertion in the VIDS board or to permit removal of the top part of the form. Carbons separate all of the copies so that the coded information carries through to each copy of the form.

At the O-level of maintenance, copies of the VIDS/MAF are used and distributed as follows:

- Copy 1—work center register, control, and processing copy
- Copy 2—QA suspense file copy
- Copy 3—maintenance control register
- Copy 4—aircraft discrepancy book (right side) copy
- Copy 5—work center MDR verification copy

At the I-level of maintenance, copies of the VIDSMAF are used and distributed as follows:

No. SWP 4826

COPY 1

WORK CENTER REGISTER, CONTROL AND PROCESSING COPY

5 PART FORM

ENTRIES REQUIRED SIGNATURE

VIDS/MAF

OPNAV 4790/60 (REV 5-88) S/N 0107-LF-002-5900

USE BALL-POINT PEN PRESS HARD

NONE LOGS REC

☒ ☐ ☐ **AZ1 Seamen**

LOCAL USE	NAME/SHIFT	ACCUMULATED WORK HOURS				ACCUMULATED AWM HOURS			
		TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS
	Boat	3lcb	4133	0	5	0	5		
	Boat	3lcb	4133	0	5	0	5		
REFERENCE									

(H-Z) FAILED/REQUIRED MATERIAL												
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE QRD	49 REQ NO	53 DATE REC
<input type="checkbox"/>	<input type="checkbox"/>				82598	1268		1	AK7	03	4133	4133
<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>											

SAMPLE

FOLD										TECHNICAL DIRECTIVE IDENTIFICATION									
A7 WORK UNIT CODE	A2 ACTION ORG	A3 TRANS	A4 MANTAL	A5 ACT TAKEN	A6 MAL CODE	A7 ITEMS	A8 MAN HOURS	A9 ELAPSED M/T	A10 TERM	F01 CODE	F11 BASIC NO	F15 RV	F16 AM	F17 PART	F18 NOT				
7236100	AC1	23	1	R	383	1	1	0	1										
A8 TYPE EQUIP	A9 BUSER NUMBER	A10 DISCD	A11 T/M	A12 POST	A13 FID	A14 SMT/TYPE	A15 SER	A16 METER	A17 SE MTR	A18	F21	F22 PERM UNIT CODE	F23						
AAEG	151687	D	B																

REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM			
DATE	TIME	EOC		EOB MFGR	E13 SERIAL NUMBER	GOB MFGR	G13 SERIAL NUMBER				
RECEIVED	B08 4133	B12 1400	B16 B	82598	68	82598	92				
IN WORK	B19 4133	B23 1400	B27 B	E23 PART NUMBER	1268	E38 DATE REMOVED	4133				
COMPLETED	B30 4133	B34 1615		E23 PART NUMBER	1268	G23 PART NUMBER	1268				
AWAITING MAINTENANCE				E42 TIME/CYCLES	M0425	E47 TIME/CYCLES					
B38 B39 HOURS				E52 TIME/CYCLES		G38 TIME/CYCLES	M0167				
B43 B44 HOURS				E57 TIME/CYCLES		G43 TIME/CYCLES					
B48 B49 HOURS				E62 TIME/CYCLES		G48 TIME/CYCLES					

MAINTENANCE/SUPPLY RECORD								DISCREPANCY							
JOB STATUS	DATE	TIME	EOC												
B53 S	B54 4133	B58 1430	B62 B					RADAR ALTIMETER READS ABOVE PRESSURE ALTIMETER							
B53 M	B54 4133	B58 1545	B62 B					BY 150'							
C08	C09	C13	C17					MATCHED SET SEE JCN AC1-133-022							
C20	C21	C25	C29					CORRECTIVE ACTION							
C32	C33	C37	C41					REMOVED & REPLACED RT601/APN 141. CHECKS GOOD.							
C44	C45	C49	C53												
C56	C57	C61	C65												
D08	D09	D13	D17												
CORRECTED BY				INSPECTED BY				SUPERVISOR				MAINT CONTROL			
AT2 Boat				AT1 Pistol				ATC Door				AZ2 Frost			
MODEX				PRI				TURN-IN				DOCUMENT			
SYSTEM-REASON				SYSTEM-REASON				SYSTEM-REASON				SYSTEM-REASON			
JOB CONTROL NUMBER				A19 WORK CENTER											
AC1 133 021				210											

AMR00011

Figure 1-11.—Visual Information Display System/Maintenance Action Form (VIDS/MAF).

Copy 1—work center register, control, and processing copy

Copy 2—supply department VIDS copy

Copy 3—production control register

Copy 4—RFI/BCM copy

Copy 5—work center MDR verification copy

The VIDSMAF documents the following types of maintenance actions and accumulates data for reports that establish supply and manpower requirements:

Maintenance actions:

- Repair work on the equipment that does not involve removal of defective or suspected defective repairable components.

- The portion of a special, conditional, corrosion, periodic, phase, acceptance, or transfer inspection that involves the search for defects. This portion is commonly known as the *look phase*.

- Removal of components for check, test, inspection, and service actions.

- Removal and replacement of an item for cannibalization purposes.

- Removal or installation of items/components for mission configuration changes as designated by the ACC.

- Incorporation of TD changes and associated maintenance actions.

- Removal and replacement of repairable components within end items.

- Subsystem Capability and Impact Reporting (SCIR) data.

- Fix-in-place actions discovered during inspections.

Supply/manpower reports:

- Man-hours accumulated during work stoppage for parts or maintenance.

- Accumulated man-hours during or at the end of a reporting period for a job not completed, where required by the ACC.

- Assistance from work centers in support of a basic work center.

- Support of a repairable item being processed through an IMA.

- Troubleshooting man-hours.

- Ordering and issuing of repairable components, subassemblies, and parts.

- Accumulated man-hours on jobs closed out due to an aircraft accident.

- Documentation of preservation or depreservation.

The MAF flow under NALCOMIS varies slightly from that of a VIDS/MAF. Upon origination of a discrepancy, only two copies of the MAF are printed and, as the discrepancy is repaired, it is updated electronically. The complete process for OMA and IMA are outlined in OPNAVINST 4790.2.

Q45. *What is the result of inaccurate or incomplete information documented in the Maintenance Data System (MDS)?*

Q46. *At both the I and O levels of maintenance, what is the purpose of NALCOMIS or VIDS/MAFS?*

Q47. *What is the "look phase" of an inspection?*

## MACHINE REPORTS

O- and I-level maintenance supervisors regularly use the daily and monthly MDRs described in this section. OPNAVINST 4790.2 lists all of the MDRs available from the DSF and their uses.

### VIDS/MAF Copy 1 Daily Audit Report

This report is for the work center supervisor. It is designed to validate the previous day's VIDS/MAF copy 1 submissions. DARs should be verified daily, corrections annotated, and returned to the analyst. The analyst will resubmit the corrected report with the following day's data. NALCOMIS users should refer to the *NALCOMIS User's Manual* for details on verification of data accuracy.

### Monthly Production Report (MDR-2)

This report summarizes, by work center, all maintenance actions, TD compliance, and data entered in the Failed/Material block of the VIDS/MAF.

## CODES

LEARNING OBJECTIVE: Recognize the codes used to document maintenance on NALCOMIS and the VIDS/MAF.

Aircraft maintenance uses codes for processing information. Some information, such as the aircraft bureau number, is normally expressed in numerical terms; thus, it does not need to be converted into codes. In other cases, the information must be converted into code so it can be machine processed.

Basic codes used on the VIDS/MAF are prescribed for Navy-wide use. Therefore, they cannot be changed at local option. Some of the codes are built to provide some flexibility to allow expansion to meet local needs. Some of the principal codes used by aircraft maintenance activities are described below.

**NOTE:** A complete list of the codes can be found in an appendix to OPNAVINST 4790.2.

*Organization code.* The organization code is a three-character, alphanumeric code that identifies an activity within a major command.

*Permanent Unit Code (PUC).* The PUC is a six-character, numeric code assigned to each aircraft reporting custodian for identification.

*Work Center Code (WCC).* The WCC is a three-character, numeric code that is used to identify work centers within an organization.

*Type Equipment code (TEC).* The TEC is a four-character, alphabetic code that identifies the end item of equipment on which work is performed, such as aircraft, engine, or SE.

*Julian date.* The Julian date is a four-character, numeric code used to show the date. The first character of the code is the last digit of the year, and the last three characters of the code show the day of the year. For example, Julian date 6324 is the 324th day of 1996, or November 19, 1996. When used on the VIDSMAF as part of the JCN, the first position (showing the year) is omitted. All dates used on source documents are shown in Julian dates.

*Job control number (JCN).* The JCN is a 9-, 10-, or 11-character, alphanumeric code used to separately identify each maintenance action. The JCN is made up of four parts: the Organization code, the three-character part of the Julian date that shows the day of the year, a sequence number, and a JCN suffix.

The sequence number is either a three-character number that runs sequentially from 001 to 999 or a three-character, alphanumeric number with an alphabetic first character and the last two numbers running sequentially, from 00 to 99. Three-character, sequence numbers are used to identify routine

day-to-day maintenance actions, such as AC4-324-216. Three-character, alphanumeric sequence numbers are used only to document major inspections other than preflight, postflight, turnaround, daily, special, conditional, corrosion, and acceptance/transfer inspections. An example of this type of JCN is AC4-324-A00.

The JCN suffix is an alphanumeric code that is used by IMAs. It identifies a subassembly, or subassembly repair action completed separately from the major component repair action. This suffix is added to the basic JCN to create the fourth part.

*Work Unit Code (WUC).* The WUC is a one-, three-, five-, or seven-character numeric or alphanumeric code. This code normally identifies the system, subsystem, set, component, and part of the end item being worked on. The first two characters identify the system and are standardized.

*Action Taken code.* The Action Taken code is a one-character, alphabetic or numeric code that describes what maintenance was performed on an item identified by a Work Unit Code.

*Commercial and Government Entity (CAGE).* This is a five-position code assigned to manufacturer's and nonmanufacturer's organizational entities and contractors of items procured by agencies of the Federal Government. This code is commonly called the Manufacturer's code.

*Malfunction Description code.* The Malfunction Description code is a three-character, alphanumeric code used to describe the malfunction occurring on or in an end item. These codes are listed in both alphabetical and numerical sequence in all Work Unit Code manuals.

*Technical Directive code.* The Technical Directive (TD) code is a 12- or 13-character code used to identify a specific TD by type number, revision, amendment, part, and kit number. This code applies to the VIDS/MAF when a TD compliance is documented. The first two characters of Technical Directive codes are listed in an appendix to OPNAVINST 4790.2.

*Technical Directive Status code.* The Technical Directive Status code is a one-character, alphabetic or numeric code used to describe the type of work accomplished. The type of work refers to scheduled maintenance, unscheduled maintenance, and so forth.

*When Discovered code.* The When Discovered code is a one-character, alphabetic code that identifies when the need for maintenance was discovered.

*Transaction code.* The transaction code is a two-character, numeric code that shows the type of data being reported.

*Time/Cycle Prefix code.* The Time/Cycle block is made up of a prefix and four numerical digits. The prefix indicates the source of time (usually in hours), cycles, or counts (rounds fired, number of catapult launches, or arrested landings). All entries in the Time/Cycle block are preceded by a prefix code. Some examples of these codes are as follows:

A—indicates aircraft time and is used to report removal/installation of equipment not having an hourmeter installed or Aeronautical Equipment Service Record (AESR) or an SRC card maintained.

E—indicates engine time (logbook time since overhaul).

L—landings.

M—indicates meter time.

N—rounds fired.

All entries in these blocks must be five digits. For example, report 27 hours type-equipment time as A0027. If the time exceeds 9,999 hours, record the last four digits only. For example, 10,231 hours would be recorded as A0231.

*Awaiting Maintenance Reason code (AWM).* The AWM code is a one-digit, numeric code used to show the reason no maintenance is being performed.

*Q48. What components create the Job Control Number (JCN)?*

*Q49. What is indicated by a JCN suffix?*

*Q50. What is a Work Unit Code (WUC)?*

*Q51. What code describes the maintenance performed on an item identified by a WUC?*

*Q52. What is the proper name for what most technicians refer to as the Manufacturer's code?*

*Q53. What is a Malfunction code?*

*Q54. How many positions complete the Time/Cycle block on a VIDS/MAF?*

## SE RECORDS, FORMS, AND DOCUMENTS

**LEARNING OBJECTIVE:** Identify the records, forms, and documents used for support equipment (SE) maintenance management and their purposes.

Throughout the operational life of an end item of SE, many records, forms, and documents are generated for the support and management of that particular item. The following records, forms, and documents (which effect transfer of SE) are used to obtain and maintain the history of operation, maintenance, and configuration status.

### SE CUSTODY AND MAINTENANCE HISTORY RECORD, OPNAV 4790/51

This form is used to record acceptance information, custody and transfer, rework, preservation and depreservation, and TDs. It also includes a record of periodic maintenance performed by hours, starts, date completed, next PM due, activity and signature. It accompanies all items of SE that have formal periodic maintenance requirements; for example, MRCs, MIMs, handbook of service instructions, manufacturer's handbook, and applicable TDs. Exceptions are precision measuring equipment (PME), engine test cells and stands, and GB1As (these items have their own records). However, those items of PME that have formal periodic maintenance requirements, in addition to calibration requirements, will require this form; for example, versatile avionics shop test (VAST) stations. Reporting custodians retain the latest completed copy, the current copy, and transcribe accumulated data on initiation of each new record (fig. 1-12). This form accompanies weapons and support equipment (WSE) to the weapons department when subcustodied from AIMD. You can find an example of the form, along with step-by-step instructions, in OPNAVINST 4790.2.

*Q55. What form is used to document preservation of support equipment?*

*Q56. Are SE Custody and Maintenance History Records, OPNAV 4790/51, used to document rework maintenance on an engine test cell?*

*Q57. Who retains the latest completed copy of the SE Custody and Maintenance History Record, OPNAV 4790/51?*







activities attend this meeting. A representative of the weapons department also attends the meeting. This meeting provides the planning and coordination needed to improve the overall maintenance program.

Organizational maintenance representatives attend this meeting to discuss the quantity and type of support required. This includes a discussion about the contents of the organizational MMP. Squadron representatives discuss all factors that affect the anticipated AIMD/IMA workload. This meeting is a tool used to plan the monthly maintenance schedule. The maintenance schedule is part of the MMP. The AIMD monthly maintenance plan is distributed by the last day, of the month prior to the month to which it applies. The following information is included in the MMP.

- A projected schedule of items to be inducted for check and test from supported squadrons and the supply activity
- Anticipated changes in the operational commitments of supported activities
- A schedule of technical training
- A schedule of maintenance requirements for shop-installed SE
- Other known or anticipated factors affecting the production effort of the IMA
- All known TD incorporation requirements
- A current list of QARs, CDQARs, and CDIs
- Identification of forced removal (high-time) components
- Weapons department inputs, which include the following: A projected schedule of armament weapons support equipment (AWSE) inspections, those items requiring test and check, and anticipated receipts or transfers; all known WSE TD incorporation requirements; and identification of known or anticipated AWSE end items or components to be returned to the AIMD for maintenance beyond the capability of the weapons department or for other reasons.

*Q58. What is the major provision of the Monthly Maintenance Plan?*

*Q59. At the O level, when is the Monthly Maintenance Plan for March required to be distributed?*

*Q60. Where can you find a list of current I-level collateral duty inspectors?*

## **MAINTENANCE TRAINING IMPROVEMENT PROGRAM (MTIP)**

LEARNING OBJECTIVE: Define the purpose of the Maintenance Training Improvement Program (MTIP) in aircraft maintenance.

The Maintenance Training Improvement Program (MTIP) is an unclassified training management system which, through diagnostic testing procedures, identifies training deficiencies at both the O- and I-levels of maintenance. Through individual evaluation of technical knowledge levels, a qualitative assessment is made of existing training courses, materials, and community level skills. Such assessments point out corrective actions needed to enhance technical knowledge levels and to improve existing training courses.

The Director of Air Warfare (N88) establishes policy and exercises overall control of the MTIP Program; however, the AMO or IMA maintenance officer ensures the MTIP program is conducted per ACC/TYCOM directives.

*Q61. What is the purpose of the Maintenance Training Improvement Program (MTIP)?*

## **SUMMARY**

This chapter discussed a variety of areas to include NAMP objectives, familiarization of O- and I-level maintenance, their structures, responsibilities, and rating applications, as well as a brief overview of the NALCOMIS program, VIDS/MAFs, SE records and forms, how they are used in the maintenance departments, and a brief description of MTIP. This volume of information is more than any one individual could memorize or be solely responsible for; therefore, you should refer to the applicable references when you need more information. Make sure you are informed of any changes affecting you or your work center.

## ANSWERS TO REVIEW QUESTIONS

- A1. *Achieve and maintain maximum material readiness, safety and conservation of material in the maintenance of aircraft.*
- A2. *To maintain assigned aircraft in a state of full mission capability (FMC).*
- A3. *Rework and upkeep.*
- A4. *Rework maintenance.*
- A5. *Standard depot-level maintenance (SDLM).*
- A6. *Work done to aircraft, equipment, or support equipment to improve or change its capability to perform special functions.*
- A7. *Operating units and SE activities.*
- A8. *Scheduled*
- A9. *Special upkeep or unscheduled maintenance.*
- A10. *Three.*
- A11. *Organizational, intermediate and depot.*
- A12. *Work performed by an operating activity on a day-to-day basis in support of its own operations.*
- A13. *Intermediate level.*
- A14. *Industrial type.*
- A15. *The CNO sponsors and directs the NAMP.*
- A16. *Naval Supply Systems Command (NAVSUP).*
- A17. *A relationship that exists between a superior and subordinate within both staff and line segments of the organization.*
- A18. *A staff relationship.*
- A19. *The aircraft maintenance officer.*
- A20. *Planning, control, and production.*
- A21. *Assistant aircraft maintenance officer (AAMO), maintenance/material control officer (MMCO), and aircraft division and branch officers.*
- A22. *Assistant aircraft maintenance officer.*
- A23. *The overall productive effort of the maintenance department.*
- A24. *To prevent defects from occurring from the onset of a maintenance operation through its completion.*
- A25. *Prevention, knowledge, and special skills.*
- A26. *Monitor, control, and apply the Maintenance Data System within the activity.*
- A27. *System administrator/analyst.*
- A28. *Maintenance control.*
- A29. *Power Plants, airframes, and aviators life support systems (some activities also have an inspection or phase branch and a corrosion branch).*

- A30. *Electronics branch, electrical and instrument branch, and the armament branch.*
- A31. *Production control, the central point of the entire maintenance effort, plans and schedules the IMA's workload.*
- A32. *The maintenance data base administrator/analyst.*
- A33. *Production divisions.*
- A34. *NALCOMIS provides OMA, IMA and ASD activities with a modern. real time, responsive, computer based management information system.*
- A35. *1. To increase aircraft readiness by providing local maintenance and supply managers with timely and accurate information required in their day-to-day management and decision making process.*  
*2. To reduce the administrative burden to the fleet.*  
*3. To improve the quality of up-line reported data.*
- A36. *Visual Information Display System (VIDS).*
- A37. *Communication between maintenance/production control, workcenters, and material control.*
- A38. *VIDS board verification.*
- A39. *Copies 1 and 5 are forwarded to the work center.*
- A40. *Notify quality assurance.*
- A41. *Copy 1 of the VIDS/MAF is sent to maintenance control.*
- A42. *The component inducted is expeditious repair.*
- A43. *To the work center receiving the non-RFI component for repair.*
- A44. *The component should be properly preserved, packaged and sent to the AWP unit managed by supply personnel.*
- A45. *Loss of effectiveness of the data and the MDS in general.*
- A46. *Documentation of on-equipment maintenance actions.*
- A47. *The portion of a special, conditional, corrosion, periodic, phase, acceptance or transfer inspection that involves the search for defects.*
- A48. *The organization code, the last three digits of the Julian date, and an activity assigned sequence number.*
- A49. *A subassembly or subassembly repair action completed separately from the major component repair action.*
- A50. *A one, three, five, or seven character numeric or alphanumeric code which identifies the system, subsystem, set, component or part of the end item being worked on.*
- A51. *Action Taken Code.*
- A52. *Commercial and Government Entity (CAGE).*
- A53. *A three character, alphanumeric code used to describe the malfunction occurring on or in an end item.*

- A54. *Five, a prefix and four numbers.*
- A55. *SE Custody and Maintenance History Record, OPNAV 4790/51.*
- A56. *No. Test cells have their own records.*
- A57. *Reporting custodian.*
- A58. *The MMP provides scheduled control of all predictable maintenance.*
- A59. *By the 25th of February.*
- A60. *The IMA Monthly Maintenance Plan.*
- A61. *The MTIP identifies training deficiencies, at both the O and I levels of maintenance, through diagnostic testing procedures.*

